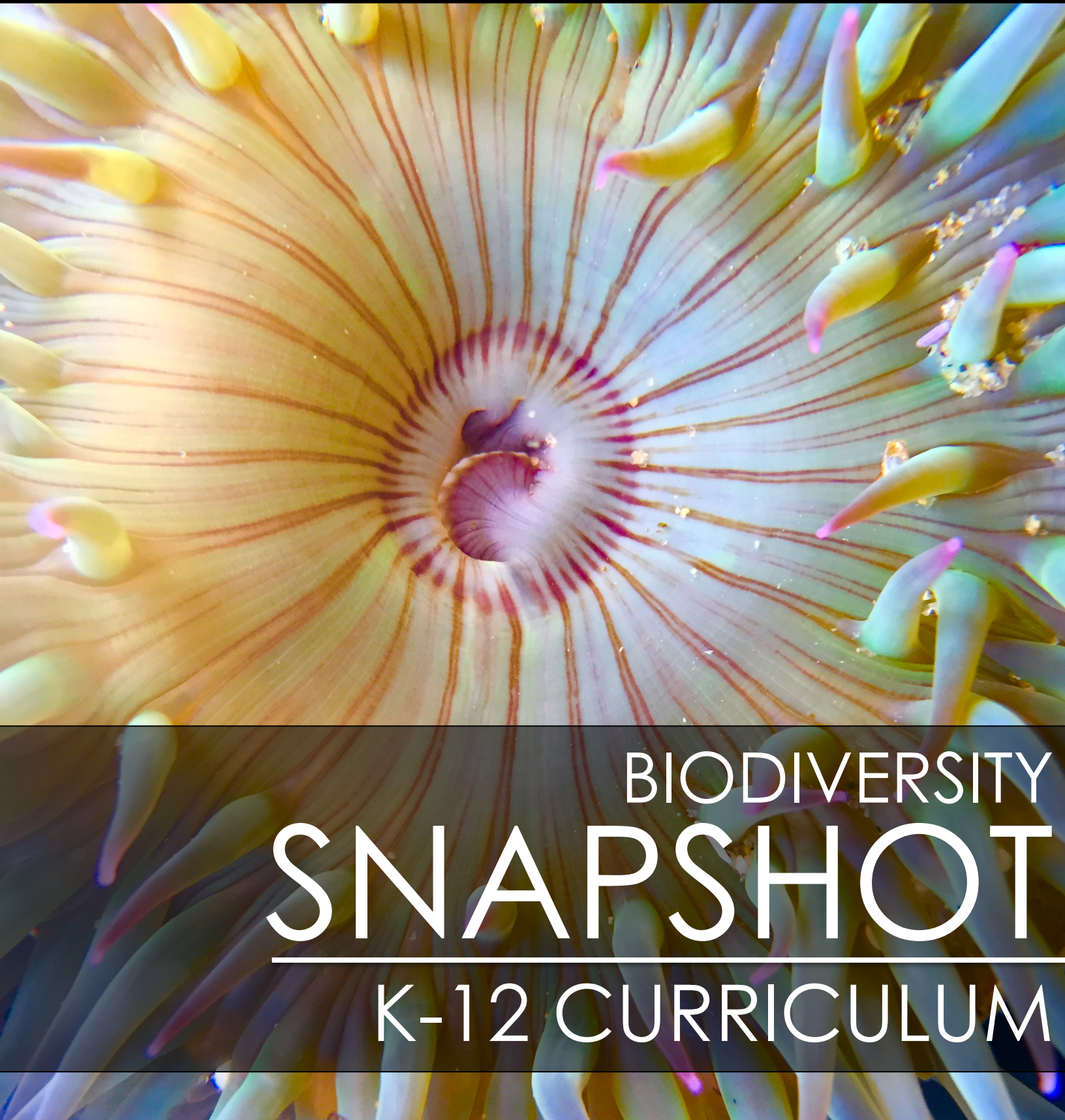


US Department of Interior
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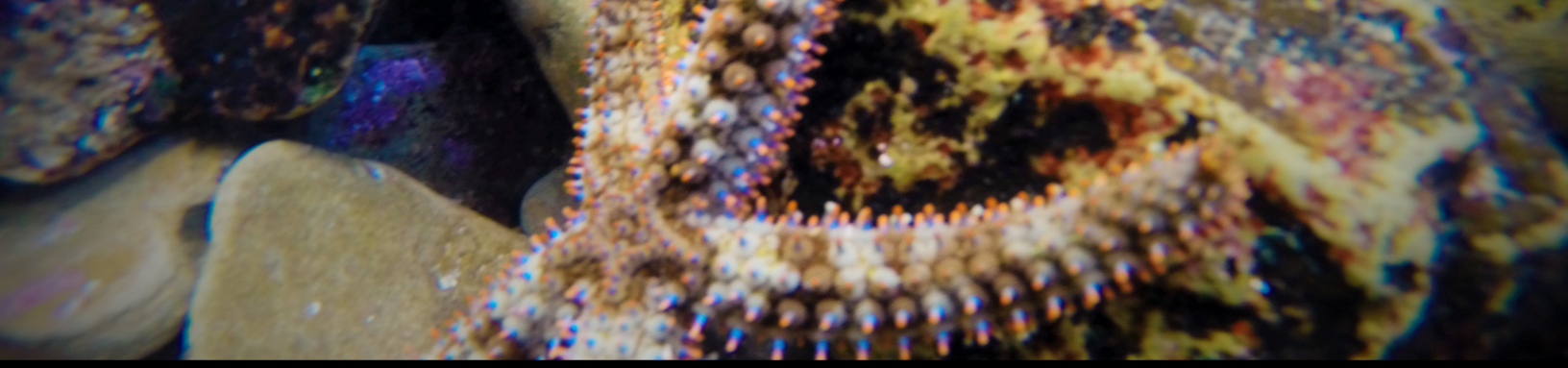


Cabrillo National Monument



BIODIVERSITY
SNAPSHOT
K-12 CURRICULUM

EXPERIENCE YOUR AMERICA™



BIODIVERSITY & YOU

Biodiversity, or biological diversity, refers to the variety of life on this planet, encompassing the spectrum of unique species, genetic variation within a species, and the distinct ecosystems that support various species. Each organism in an ecosystem plays an important role, thus ecosystems are most productive and healthy when species diversity is high. Unfortunately, species numbers are declining faster than ever before due to many human driven stressors. Therefore, in order to best study and manage species decline, we must document and obtain a greater understanding of overall species diversity.

WHAT IS A BIOBLITZ?

'**Bio**' means 'Life' and '**Blitz**' means a sudden, energetic, and concerted effort, typically on a specific task. When combined they make '**BioBlitz**', a concentrated effort to discover and document as many species of plants, animals, and other organisms in a 24-hour period. This helps map the biodiversity of a given area and can be used as tool to measure impacts and changes over time. This 'snapshot' of biodiversity, is a great way to connect the community with citizen science and the outdoors in a fun, interactive, and engaging way.





ESSENTIAL QUESTION

What living organisms are located in a given habitat and why?

OPENING ACTIVITY

Share with students they will be collecting data on the contents of their room. Divide them into groups and give each group a section where they will collect the data on the items in their section. They will need to note the different objects there are, the number of each, and report back to class. This information can be charted to show that different areas contain differing items, but that all together they make up the classroom. Inform them that this is similar to how one conducts a bioblitz. The information is collected in certain areas or zones, and presented as a “snapshot” of the biodiversity in an area on a selected date.

Key Vocabulary

- **Biodiversity** refers to diverse forms of life that inhabit a given area. **Bio** meaning life, **diversity** meaning all the differing kinds of life that are living and growing there.
- A **citizen scientist** is an individual who voluntarily contributes his or her time, effort, and resources toward scientific research in collaboration with professional scientists or alone. These individuals don't necessarily have a formal science background.
- A **naturalist** is a person who studies plants and animals as they live in nature.
- An **organism** is an individual animal, plant, or single-celled life form.
- **Habitat** is where an organism lives and grows.
- A **survey** means to look at or examine carefully and appraise something.
- An **ecosystem** is a system, or a group of interconnected elements, formed by the interaction of a community of organisms with their environment.





OBJECTIVE

Students will be able to observe, collect, and start to interpret data in a given area.

MATERIALS

- Mobile devices (Apple or Android) loaded with the iNaturalist App
- Clipboard, pencil, and magnifying glass (optional)
- Local species list with names and photos
- Data Sheets for recording observations. This allows for the number of species counted in a given area to be charted.

Data Sheet Example

	Organism Observed	Location	Description	Additional Parameters
1				
2				

WEB RESOURCES

- “How to iNaturalist” Video available on **Cabrillo NPS** YouTube Channel (English and Spanish)
- Example Species Guides: www.nps.gov/CABR
Go to: Learn About the Park>Publications>Field Guides
- Inspire students to do their part:
<http://www.biol.wvu.edu/hooper/10thingsforbiodiversity.pdf>

SET-UP. Designate an area where you can do your observation. This can be your school garden, school field, or local canyon or woodland that is next to your school site. The Mini-Blitz is to give students guided practice in making observations, using the **iNaturalist app**, and documenting the biodiversity in your area.

Locate and list the different organisms that inhabit the local ecosystem you will be studying. This should be done prior to the event. This will give the students the opportunity to frontload the dominant plant and animal life you will be observing. In this way, they will use the app more efficiently and be able to document more species in the given amount of time.

CONDUCT YOUR OWN

BIOBLITZ



BIOBLITZ DIRECTIONS



What does it all mean?

Discuss the observations as a class. What types of organisms were found where, why are some species more present than others, what might influences these differences?

Encourage your class to interpret their findings and make connections.

1. In the chosen area, put students in groups. Each student will have a roll; recorder, app user, and organism locator. Groups can be organized by what they are collecting data on: animals, plants, or insects and rotate from zone to zone to limit crowding. Rolls should be changed to allow each individual the opportunity to do each task.

2. Return to classroom and upload data of observations. This can be crosschecked with the data sheet to clarify all of the species are accounted for.

3. Review the Data: Students should graph the number of species found and type of species found. Chart the data in order to see the overview of the biodiversity of your site!



Explore. Observe. Discover.



Our sincerest hope is that getting out into nature with these activities inspire the future stewards of our most beautiful places.



"The mission of the National Park Service is to preserve and protect unimpaired the cultural, historical, and natural resources of America for this and future generations."

For any questions, please find us at:

www.nps.gov/CABR
cabr.education@nps.gov

NGSS STANDARDS

K-5 PRIMARY

K-LS1-1. K-ESS3-1.
1-LS1-1. 1-LS3-1.
2-LS2-1. 2-LS4-1.
3-LS3-1. 3-LS3-2.
3-LS4-3. 3-LS4-4.
4-LS1-1. 4-ESS2-1.
5-LS2-1. 5-LS2-1.

MIDDLE SCHOOL

MS-LS1-4. MS-LS-5.
MS-LS2-1. MS-LS2-2.
MS-LS2-4.

HIGH SCHOOL

HS-LS2-1. HS-LS2-2.
HS-LS2-6.



Photos: Michael Ready & Andrew Rosales
Curriculum Development: Andrew Rosales & Alex Warneke